

G 5185

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2013

Eighth Semester

Branch : Mechanical Engineering

AUTOMOBILE ENGINEERING (M)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

Each question carries 4 marks.

1. Explain the different types of cylinder liners and their advantages upon each other.
2. Write short notes on Direct and Indirect cooling.
3. What are the essential properties of a clutch lining material?
4. What are the advantage of epicyclic gear box over the ordinary gear box?
5. What are the basic requirements of the suspension systems in the vehicle?
6. What do you mean by reversibility in steering gears?
7. What are the factors influencing tyre life?
8. Explain the procedure of bleeding of hydraulic brakes.
9. Explain the different methods of battery charging.
10. Explain how to clean and adjust a spark plug.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. (a) Explain with the help of neat sketches the different valve actuating mechanism.
(b) Describe the construction details and function of an injector.

Or

12. (a) Describe the functions of the piston rings. Discuss the piston ring gap and joints.
(b) Why anti-freeze is mixed with coolant where the atmospheric temperature is below zero?
What are the requirements of a good anti-freeze?

Turn over

13. (a) Explain the working of a friction cone clutch. What are its merits over the single plate clutch?
(b) What is an over-drive? What are its advantages?

Or

14. (a) What are the different forces act on the rear axle? What is the utility of radius in rear axle?
(b) Explain with the help of neat sketches the working of the semi-floating and fully floating rear axles.
15. (a) Describe with the help of a neat sketch the action of a telescopic type of shock absorber.
(b) What are the common troubles experienced in the suspension systems of a vehicle?

Or

16. (a) Describe different types of steering gears.
(b) Write short notes on Caster, Camber, King Pin inclination.

17. (a) Explain the different tests applied to test the brakes of a vehicle.
(b) What are the advantages and disadvantages of a tubeless tyre?

Or

18. (a) Sketch a master cylinder and explain its working.
(b) What are the different brake troubles, their causes and remedies?

19. (a) Explain with the help of suitable sketches the complete battery ignition system.
(b) Discuss the different types of ignition magnetos.

Or

20. (a) Write short notes on :

- (i) Bendix starting drive.
- (ii) Over-running clutch drive.
- (iii) Solenoid shift system.

- (b) Explain with the help of a neat sketch the lighting and wiring system of an automobile.

(5 × 12 = 60 marks)

G 5177

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2013

Eighth Semester

Branch : Mechanical Engineering/Automobile Engineering

PRODUCTION ENGINEERING (MU)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. What is oblique metal cutting ?
2. Explain the importance of Rake angle.
3. What is crater wear ?
4. List out the uses of cutting fluids.
5. State the basic processes of powder metallurgy ?
6. What is Hot pressing in Powder metallurgy ?
7. Give the basic classification of ceramics.
8. Describe slip casting.
9. What is EDM ?
10. List out the merits of EBM.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. (a) Explain the signature of single point cutting tool with sketches.

Or

- (b) What is Merchant's circle ? Explain its uses.

12. (a) What are the desirable properties of tool materials ? Explain the composition of any two cutting tool materials.

Or

- (b) What is meant by Economies of machining ? What is its significance ?

Turn over

13. (a) Explain in detail the applications of powder metallurgy.

Or

(b) What are the characteristics of metal powders ? Explain.

14. (a) What are the attractive features of ceramics in comparison with metals ? Explain the product applications of ceramics.

Or

(b) What are the various types of glasses ? Explain any two methods of manufacture of glasses.

15. (a) What is the principle of Laser Beam Machining ? List out its advantages. Explain its application areas.

Or

(b) Explain the working of Abrasive Jet Machining with the help of a block diagram. Explain its application areas and mention the limitations.

(5 × 12 = 60 marks)

G 5197

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2013

Eighth Semester

Branch : Mechanical Engineering

PRODUCTION PLANNING AND CONTROL (M)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

Each question carries 4 marks.

1. State the objectives of Production Planning and Control.
2. Name the various factors affecting Sales forecasting.
3. Describe the term Route Sheet.
4. Write short note on Bill of Materials (BoM).
5. What is no passing rule in sequencing algorithm? State the assumptions made while sequencing problem.
6. Describe the terminologies used in sequencing.
7. Define materials management. State its objectives.
8. Describe briefly the various functions of stores.
9. Differentiate between CPM and PERT.
10. Write short note on report preparation.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. (a) Explain the term Production Planning and Control. Explain how they relate with each other.

Or

- (b) Project the trend of sales for next four years :

| | | | | | | |
|----------------------|---|------|------|------|------|------|
| Years | : | 2007 | 2008 | 2009 | 2010 | 2011 |
| Sales in lanks (Rs.) | : | 120 | 140 | 150 | 170 | 190 |

(12 marks)

Turn over

12. (a) Define Material Requirement Planning and describe the various inputs to MRP system.

Or

- (b) Explain the following terms in brief :—

- (i) Routing. (ii) Bonding
(iii) Scheduling. (iv) Route Sheet.

(12 marks)

13. (a) Solve the following problem, when passing is not allowed :—

| Job | Machines (Processing time in Hrs) | | | |
|-------|-----------------------------------|-------|-------|-------|
| | M_1 | M_2 | M_3 | M_4 |
| A ... | 12 | 5 | 3 | 12 |
| B ... | 9 | 2 | 9 | 9 |
| C ... | 13 | 3 | 4 | 13 |
| D ... | 14 | 3 | 3 | 14 |

Or

- (b) The processing time (in hours) for 7 jobs on 3 machines is given below :

| Job | | A | B | C | D | E | F | G |
|---------------|-----|---|---|---|----|---|---|----|
| Machine M_1 | ... | 3 | 8 | 7 | 4 | 9 | 8 | 7 |
| Machine M_2 | ... | 6 | 7 | 5 | 11 | 5 | 6 | 12 |
| Machine M_3 | ... | 4 | 3 | 2 | 5 | 1 | 4 | 3 |

Order of processing jobs : M_1, M_3, M_2 . Determine the optimum sequence and the total (minimum) elapsed time for processing the jobs.

(12 marks)

14. (a) Describe the purchasing procedure to be adopted for a medium size industry.

Or

- (b) Name and explain the various types of records maintained in stores.

(12 marks)

15. (a) What are the basic duties, procedures and rules to be adopted while dispatching?

Or

- (b) The following data pertains to some network. Compress the project to the least possible duration and estimate the crashing cost :—

| Activities | T_n | T_c | Cost slope |
|------------|-------|-------|------------|
| 1-2 ... | 3 | 2 | 700 |
| 1-3 ... | 7 | 4 | 200 |
| 2-3 ... | 5 | 3 | 100 |
| 2-4 ... | 8 | 6 | 200 |
| 3-4 ... | 4 | 2 | 400 |

(12 marks)

[5 × 12 = 60 marks]

B.TECH. DEGREE EXAMINATION, MAY 2013

Eighth Semester

Branch : Mechanical Engineering

MACHINE DESIGN AND DRAWING--II (M)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

*Answer any two questions from Part A and Part B.
Use of Design Data Book is permitted.
Missing Data may be assumed.*

Part A

- 1. (a) How do you specify the size of gear tooth ? (5 marks)
- (b) A pair of spur gear is to be designed. The pinion rotates at 800 r.p.m. and transmits 6 kW to gear rotating at 200 r.p.m.. Starting torque can be taken as 140% of rated torque for pinion and gear allowable stress is 150 MPa. (20 marks)
- 2. (a) What is virtual number of teeth in helical gear ? (5 marks)
- (b) A pair of parallel helical gears consists of 24 teeth pinion running at 500 r.p.m. and supplying 2.5 kW to a gear. The speed of reduction is 4 : 1. Both gears are made of hardened steel ($\sigma = 750 \text{ N/mm}^2$). The service factor and factor of safety are 1.5 and 2 respectively. Design and derive. (20 marks)
- 3. (a) How will you decide the direction of three components of resultant tooth force in level gears ? (5 marks)
- (b) A pair of high grade CI level gears with their axes right angles to each other to have an angular velocity of 1/2. The pinion shaft rotates of 200 r.p.m. and transmits 12 kW. Safe shin for CI is 105 MPa. Design the derive. (20 marks)
- 4. (a) What is irreversibility in worm gear drive ? How is it achieved ? (5 marks)
- (b) A pair of worm and worm wheel is designated as 2 | 52 | 10 | 4 10 kW power at 720 r.p.m. is supplied to worm shaft. $\mu = .04$, and pressure angle is 20° . Calculate three components of the resultant gear tooth force on the worm wheel. (20 marks)

[2 x 25 = 50 marks]

Turn over

Part B

5. (a) Difference between hydrodynamics and hydrostatic lubrication. (5 marks)
- (b) A ball bearing fitted in a turbo generator of an air-craft is required to last for 2000 hrs. with a reliability of 99%. What should be the rated life of the bearing selected for the application? (20 marks)
6. A ball bearing operates on the following work cycle :—

| Radial load (N) | Speed (r.p.m.) | Time (%) |
|--------------------|-------------------|-------------|
| 3000 | 720 | 30 |
| 7000 | 1440 | 50 |
| 5000 | 906 | 20 |

The dynamic capacity of the bearing is 16.6 kN, calculate ;

- (i) the average speed of rotation.
- (ii) the equivalent radial load.
- (iii) the bearing life.

(25 marks)

- 7 Following data is give for full hydrodynamic bearing.

Radial load = 25 kN, journal speed = 900 r.p.m., unit bearing pressure = 2.5 MPa

$\frac{l}{d}$ ratio = 1, viscosity of lubricant = 20 CP, class of fit = H₇ e₇.

Calculate ; (i) dimensions of bearing ; (ii) Minimum film thickness and (iii) requirement of oil flow.

(25 marks)

8. Design an impeller of centrifugal pump :

Quality of water to be pumped = 500 lpm

Height of centre line of pump above mean sump level = 3 m

Depth of centre line of pump below delivery point = 8 m

Length of suction pipe (total) = 10 m

Length of delivery pipe = 60 m

Number of bends in suction branch = 1

Number of bends in delivering branch = 1

Specific speed = 1400 r.p.m.

(25 marks)

(2 × 25 = 50 marks]

G 5223

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2013

Eighth Semester

Branch : Mechanical Engineering

AEROSPACE ENGINEERING (Elective II) [M]

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

*Answer all questions.
Each question carries 4 marks.*

1. What is International standard atmosphere ?
2. Differentiate between static, dynamic and stagnation conditions.
3. Explain briefly about aerodynamic centre.
4. How does supersonic lift vary with Mach number ?
5. What is meant by thrust augmentation ?
6. Explain the working of Turbo jet engine.
7. Explain propeller thrust coefficient.
8. What are the factors which govern the performance of an aeroplane ?
9. Write short notes on wind tunnel testing.
10. Differentiate between True air Speed and indicated air speed.

(10 × 4 = 40 marks)

Part B

*Answer all questions.
Each question carries 12 marks.*

11. Derive the Reynolds transport theorem for a stationary control volume. Deduce the integral form of continuity equation.

Or

12. Derive expressions for variation of pressure temperature and density with altitude in troposphere and stratosphere.
13. Explain about high speed aerofoils. Discuss the drag reduction methods used in aeroplanes.

Or

14. (a) State Buckingham's π theorem. What are its limitations ?
(b) Using the above theorem, show that the drag of a body moving at a very low speed in a viscous fluid should be proportional to speed.

Turn over

15. Derive expressions for thrust and efficiency of a propeller by momentum theory.

Or

16. Explain the working of a turbojet engine. Plot its characteristic curves.

17. (a) What are service ceiling and absolute ceiling ?

(b) Obtain the maximum and minimum speeds in steady level flight for the following aeroplane at sea level. $W = 100000 \text{ N}$, $CL_{m,ax} = 1.5$, $CD = 0.016 + 0.45 CL^2$, thrust available = 25000 N.

Or

18. Write short notes on :

(i) Aerobatics.

(ii) Range and endurance.

(iii) Circling flight and Banked flight.

19. Explain the different methods for flow visualisation in a wind tunnel.

Or

20. (a) What is escape velocity ?

(b) With neat sketches, explain the working of a liquid propellant rocket and mention its advantages over solid propellant rockets.

(5 × 12 = 60 marks)

G 5256

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2013

Eighth Semester

Branch : Mechanical Engineering

MANAGEMENT INFORMATION SYSTEMS (Elective III) [M]

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

Each question carries 4 marks.

1. What are the different levels of business activity ?
2. Discuss the job content of different management levels.
3. Define Databases.
4. Describe business as a system.
5. Explain the role of Fiber optics in communication.
6. What are the elements of a communication system ?
7. Describe the priority analysis in selection of information systems.
8. What is meant by a dataflow diagram ?
9. Describe the concept of "Intelligent building".
10. Explain briefly the new trends in technology of MIS.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. (a) What are the elements of MIS ? Explain the importance of each of them.

Or

- (b) Distinguish between the "Business" and Technical" dimensions of information. with the help of examples.

12. (a) What do you mean by business model ? Explain how to build the business modelling with the help of block diagram.

Or

- (b) Write notes on (i) Report generation and (ii) Time sharing in MIS.

Turn over

13. (a) Explain the generic distributed data processing with block diagram.

Or

(b) Is it conceivable that some companies would be better off in operating their MIS on a centralized basis ? Or distributed data processing the inevitable trend for every one.

14. (a) Describe a detail plan of implementation of MIS in an engineering college.

Or

(b) What are the various types of testing methods for MIS before implementation in an organization ?

15. (a) How can we test the reliability of an MIS ? Explain the steps involved.

Or

(b) Security is a major issue in modern information systems. How can we tackle that within the fund restrictions ?

(5 × 12 = 60 marks)

G 5257

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2013

Eighth Semester

Branch : Mechanical Engineering

CRYOGENICS (Elective III) [M]

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Approved charts and tables are permitted.

Part A

Each question carries 4 marks.

1. What is the significance of Third law of Thermodynamics?
2. Explain the properties of liquid Hydrogen.
3. Why precooling is required in some gas liquefaction systems?
4. Discuss Cryo pumping.
5. Explain frost phenomenon.
6. What are the safety methods adopted in a cryogenic storage vessel?
7. Discuss the variation of hardness and ductility in the cryogenic temperature range.
8. Discuss foundation effect and rolling film effect.
9. Describe the superfluidity of helium.
10. Discuss the relevance of cryogenics in Medicine.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Explain the limitations of conventional methods to produce very low temperature.

Or

12. Explain Joule-Thomson effect. Show that an ideal gas would not experience a temperature change on undergoing an expansion through an expansion valve.

Turn over

13. Explain the variation of yield strength and ultimate strength at low temperature with graphs.

Or

14. Differentiate between Type I and Type II super conductors.
15. A simple Linde liquefaction system operates between 290 K and 71.9 K, and uses nitrogen as working fluid. The gas is isothermally and reversibly compressed to 10.1 MPa. The low pressure corresponds to the saturation pressure of liquid nitrogen at 71.9 K. Assuming ideal heat exchangers and no heat in leak to the system, what is the liquid yield and Fegine of Merit (FOM) for this liquefier.

Or

16. Explain Claude liquefaction system with a neat sketch. Plot the process on T-S diagram and derive the expression for liquid yield and work requirement per unit mass compressed.
17. Explain the working of Gifford Mc-Mohan refrigerator with a neat sketch.

Or

18. Explain the working of Philips refrigeration system with a neat sketch.
19. With the help of a neat sketch, explain a Dewar Vessel.

Or

20. Write short notes on the application of cryogenics in :

- (a) Biology.
- (b) Space technology.
- (c) Surgery.

(5 × 12 = 60 marks)

G 5258

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2013

Eighth Semester

Branch : Mechanical Engineering

TOTAL QUALITY MANAGEMENT (Elective III) [M]

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

Each question carries 4 marks.

1. What is meant by empowerment ?
2. What is meant by suggestion system ?
3. Describe Kaizen.
4. What is the essence of re-engineering ?
5. What is a check sheet ?
6. Give the use of fishbone diagram.
7. What is the role of facilitator in quality circles ?
8. Describe the concept of TQC.
9. What is the purpose of ISO certification ?
10. How does TQM differ from quality control ?

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. (a) Describe the Kano model of customer requirements.
Or
(b) Write notes on (i) Suggestion system ; (ii) Gainsharing ; and (iii) Performance appraisal.
12. (a) What are the components of quality costing ? Explain with the help of examples and diagrams.
Or
(b) Discuss the Deming's philosophy of TQM.
13. (a) Explain the process of Benchmarking. List out its advantages.
Or
(b) What is "House of Quality" ? Explain with an example.

Turn over

14. (a) Kamban is an umbrella concept. Discuss.

Or

(b) Inventory is a dead investment and should be avoided if possible. Comment on the statement and give your suggestions.

15. (a) What is ISO certification ? Briefly describe the procedure of ISO certification in an industry.

Or

(b) What are the main three pillars of TQM implementation in an industry ? Discuss with respect to Kerala context.

(5 × 12 = 60 marks)

F 9080

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2011

Eighth Semester

Branch—Mechanical Engineering

CRYOGENICS (Elective—III) (M)

(Supplementary)

Time : Three Hours

Maximum : 100 Marks

Approved tables and charts are permitted.

Answer all questions.

Part A

Each question carries 4 marks.

1. What is the significance of Third Law of Thermodynamics ?
2. List the main processes for the production of low temperatures.
3. Explain the properties of Liquid Oxygen.
4. What is inversion temperature ?
5. Explain an ideal gas liquefaction cycle with reference to a T-S-diagram.
6. Why pre-cooling is required in some gas liquefaction systems ?
7. What is magnetic cooling ?
8. What is the liquid yield and start up time required for a conventional Linde Helium liquifier ?
9. What is cryopumping ?
10. What is superconductivity ?

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Explain the recent developments made in the field of Cryogenic Engineering.
Or
12. Explain the important mile stones in the development of Cryogenic Engineering since 1900.
13. Explain the effect of low temperature on any two mechanical properties of Engineering materials.
Or
14. Differentiate between Type I and Type II superconductors.

Turn over

15. What do you mean by figure of merit and liquid yield ?

B.TECH. DEGREE EXAMINATION, NOVEMBER 2011

- 16. Describe with sketch, any one liquifaction system for hydrogen.
- 17. Explain the working of Gifford-Mc Mohan Refrigerator with a neat sketch.

Branch—Mechanical Engineering

- 18. Explain the functioning of Joule-Thompson Refrigeration system.
- 19. Explain a Dewar vessel with a neat sketch.

Maximum : 100 Marks

Or

Time : Three Hours

- 20. Write short notes on Cryogenics in space technology.

Answer all questions.

(5 × 12 = 60 marks)

Part A

Each question carries 4 marks.

1. What is the significance of Third Law of Thermodynamics ?
2. List the main processes for the production of low temperatures.
3. Explain the properties of Liquid Oxygen.
4. What is inversion temperature ?
5. Explain an ideal gas liquifaction cycle with reference to a T-S diagram.
6. Why pre-cooling is required in some gas liquifaction systems ?
7. What is magnetic cooling ?
8. What is the liquid yield and start up time required for a conventional Linde Helium liquifier ?
9. What is cryopumping ?
10. What is superconductivity ?

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Explain the recent developments made in the field of Cryogenic Engineering.
12. Explain the important milestones in the development of Cryogenic Engineering since 1900.
13. Explain the effect of low temperature on any two mechanical properties of Engineering materials.
14. Differentiate between Type I and Type II superconductors.

Or

Or

8th ME

G 5224

(Pages : 3)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2013

Eighth Semester

Branch : Mechanical Engineering

PROJECT MANAGEMENT (Elective II) (M)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

Each question carries 4 marks.

1. Explain the concept of Project Management. State its objectives.
2. What do you mean by Project implementation ?
3. Define the terms (a) Crash cost. (b) Normal time.
4. What is CPM ? What are the essential steps in CPM for Project Planning ?
5. State the objectives of short term forecasting ?
6. Briefly explain the various steps involved in Forecasting ?
7. Can risk be eliminated from Projects ? Explain.
8. Define Simulation. Why is Simulation used ?
9. Write short note on creation of different views on screen in M.S. Project.
10. Differentiate between Management high level report and Departmental reports.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Name and describe the various types of Projects.

Or

12. Explain the necessity of conducting feasibility analysis for a project.

Turn over

13. The following table gives data on normal time and cost and crash time and cost for a project :

| Activity | NORMAL | | CRASH | |
|----------|-------------|-----------|-------------|-----------|
| | Time (days) | Cost (Rs) | Time (days) | Cost (Rs) |
| 1-2 | 6 | 60 | 4 | 100 |
| 1-3 | 4 | 60 | 2 | 200 |
| 2-4 | 5 | 50 | 3 | 150 |
| 2-5 | 3 | 45 | 1 | 65 |
| 3-4 | 6 | 90 | 4 | 200 |
| 4-6 | 8 | 80 | 4 | 300 |
| 5-6 | 4 | 40 | 2 | 100 |
| 6-7 | 3 | 45 | 2 | 80 |

- (i) Draw the network for the project.
 (ii) Find the minimum total time of project of the crash and the corresponding cost, taking into consideration the minimum crash cost.

Or

14. The time estimates of three activity A, B and C are as follows :

| | Optimistic time | Most likely time | Pesismistic time |
|---|-----------------|------------------|------------------|
| A | 10 | 12 | 14 |
| B | 6 | 8 | 12 |
| C | 5 | 10 | 12 |

Determine expected time and variance for each activity. Which activity has more reliable time estimates?

15. Calculate trend adjusted forecast using the following data :

| | | | | | | | | | | |
|---------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Quarter | : 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Demand | : 213 | 201 | 198 | 207 | 220 | 232 | 210 | 217 | 212 | 225 |

Further given, initial estimate = 208, initial trend = 0, $\alpha = 0.2$ and $\beta = 0.1$.

Or

16. You are given the following information about demand of an item.

| | | | | | | | | | | | |
|--------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Month | : 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Demand | : 220 | 228 | 217 | 219 | 258 | 241 | 239 | 244 | 256 | 260 | 265 |

Calculate forecasted values using (a) 3-monthly moving averages ; (b) 5-monthly moving averages ; (c) 4-monthly moving averages with weights as 4 : 3 : 2 : 1, the largest weight being for the most recent value.

17. Explain the steps involved in monte carlo simulation. What are the elements of a simulation model?

Or

18. What is an influence diagram ? How it is used to identify and analyze risk sources and to assign priorities to those sources ?
 19. What are the advantages and limitations of M.S. Project Software when we compare it with other software used for similar purpose ?

Or

20. Explain the needs of Reports in Projects. What are the general details usually included in a report?

(5 × 12 = 60 marks)